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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

10/506915

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Applicant's or agent's file reference P/63539/J63		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA416)	
International application No. PCT/B 03/01604	International filing date (day/month/year) 21.03.2003	Priority date (day/month/year) 21.03.2002	
International Patent Classification (IPC) or both national classification and IPC G05B15/00			
Applicant MARCONI COMMUNICATIONS GMBH et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
 - ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 13.10.2003	Date of completion of this report 14.06.2004
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer De Syllas, D Telephone No. +49 89 2399-2591



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IB 03/01604**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

Description, Pages

1-16 as originally filed

Claims, Numbers

1-20 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

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International application No. **PCT/IB 03/01604**

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2, 9-12, 17
	No: Claims	1, 3-8, 13-16, 18-20
Inventive step (IS)	Yes: Claims	
	No: Claims	1-20
Industrial applicability (IA)	Yes: Claims	1-20
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

- D1: HARSCHER P ET AL: 'Automated computer-controlled tuning of waveguide filters using adaptive network models' PROCEEDINGS OF 2000 ASIA-PACIFIC MICROWAVE CONFERENCE, SYDNEY, NSW, AUSTRALIA, 3-6 DEC. 2000, vol. 49, no. 11, pages 2125-2130, XP002248578 IEEE Transactions on Microwave Theory and Techniques, Nov. 2001, IEEE, USA ISSN: 0018-9480
- D2: US-A-5 081 590 (GOMINHO EMANUEL C ET AL) 14 January 1992

2. D1, which is considered to disclose the closest prior art to the claimed invention, discloses a method for computer-controlled tuning of waveguide filters comprising the steps defined by Claim 1 of the present application. More specifically, the method disclosed by D1 comprises the steps of obtaining a "true" network filter model with the tuning screw in a first -initial- position by measurement and subsequent gradient optimisation (minimisation of the means square error), determining the element sensitivities and that of the tuning screws, further optimising the corrected network model to satisfy the filter specifications and finally turning the tuning screws to the position determined by the optimisation process. The whole process is repeated (e.g. 250 times; see figure 7 and the corresponding remarks at the bridging paragraph between pages 2128 and 2129) until the (initial) filter response is close enough to the final filter specifications. Reference is made to D1, Chapters I. ("Introduction") and II. ("Tuning Procedure") at pages 2125 to 2127.

The subject-matter of Claim 1 is therefore anticipated by D1 and thus Claim 1 does not meet the requirements of Article 33(2) PCT.

3. Besides to D1, it is considered that the method of automatic, computer-aided, adjustment of devices (microwave filters) having setting parameters, as defined by Claim 1, is also known from D2 (Article 33(2) PCT). More specifically, D2 discloses a computerised method incorporating an optimisation gradient algorithm for tuning a

microstrip microwave amplifier. The disclosed technique is based on initially testing the response characteristics, perturbing circuit matching elements and measuring the response as a result of the perturbations and thereafter effecting the required change in the circuit's tuning elements to bring the circuit response in conformance with a desired value. Reference is made to the following passages of D2: Abstract; figures 1, 2, 4 and 8; column 2, line 9 to column 3, line 29.

3. Dependent Claims 2 to 17 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, involve an inventive step. These features are either comprised in the disclosures of the above cited documents D1 and D2 (Claims 3-8, 13-16; Article 33(2) PCT) for the same purpose and in a similar field, or they concern measures of normal design procedure, thus they are obvious to the skilled man (Claims 9-12, 17; Article 33(3) PCT).

4. The previous remark also applies to the subject-matter of Claims 18 to 20, which merely define the computer apparatus, including the respective software stored in a memory, for putting into practice the method defined by Claim 1. Since the method and the corresponding apparatus are disclosed by D1 (see figures 1 and 2) and D2 (see figures 2 and 4), the subject-matter of these claims is known in the art (Article 33(2) PCT).

5. The application and its claims are all directed to automatic adjustment of devices having setting elements, and more specifically to the automatic adjustment of microwave filters. Consequently, the subject-matter of all claims is industrially applicable (Article 33(4) PCT).